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EXAMINER

VIANA DI PRISCO, GERMAN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 5, 6, 7, 8, 10, 11, 14, 15, 16, 28, 29, 32, 33, 34, 35, 37, 38, 41, 42 and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by Shu et al. ("Shu", United States Patent Application Publication No.: 2007/0078624 A1).

Consider claims 1, 10, 28 and 37, Shu discloses a memory (inherently taught by wireless network devices e.g. PC1) to store an image comprising a plurality of virtual machines and only one multi-tasking operating system (e.g. Windows, Linux, Unix, Windows, Macs, etc.), wherein each of the virtual machines comprises a wireless network application (e.g. Access Point client, Access Point station, broadband gateway, wireless bridge) to execute on the multi-tasking operating system (paragraphs [0021], [0028], and [0035]); a processor to execute the virtual machines (inherently taught by wireless devices e.g. PC1, which can be a laptop, PDA or cell phone) (paragraphs [0021] and [0029]); and a port (in Network Interface Card) comprising a physical-layer device to communicate with the network, and a media access controller to communicate with the physical-layer device and the processor (paragraph [0022]).

Consider claims 2, 11, 29 and 38 and as applied to claims 1, 10, 17, 28, 37 and 44 respectively above, Shu further discloses a wireless network device which is compliant with a standard selected from the group consisting of IEEE standards 802.11, 802.11 a, 802.11 b, 802.11g and 802.11 n (paragraphs [0005]-[0006]).

Consider claims 5, 14, 32 and 41, and as applied to claims 1, 10, 28 and 37 respectively above Shu further discloses that at least one of the wireless network applications is selected from the group consisting of a wireless network access point; a wireless network client; a wireless network point-to-point bridge; a wireless network multi-point bridge; and a wireless network repeater (paragraphs [0026], [0028], [0031], and [0035]).

Consider claims 6 and 33, and as applied to claims 1 and 28 respectively above, Shu further discloses a plurality of virtual machine device drivers to communicate with the virtual machines; and a media access controller device driver to communicate with the virtual machine device drivers and the media access controller (paragraph [0022]).

Consider claims 7, 15, 34 and 42, and as applied to claims 1, 10, 17, 28, 37 and 44 respectively above, Shu further discloses an input device to select one or more of the virtual machines; wherein the processor executes the virtual machines selected by the input device (the input device is inherently taught by the wireless network device, which can be a laptop, a PDA or a cell phone) (paragraph [0021]).

Consider claims, 8, 16, 35 and 43 and as applied to claims 1, 10, 17, 28, 37 and 44, Shu further discloses that the processor executes a plurality of the virtual machines concurrently (e.g. the Soft AP capable device can be configured to emulate at any given

time both a client station and a LAN Access Point) (paragraph [0021]).

3. Claims 17, 21, 44 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Rothman et al. ("Rothman", United States Patent No.: US 7,290,178 B2).

Consider claims 17 and 44 Rothman discloses a wireless network device for communicating with a network comprising (processor system 600 may include a wireless network adapter, Col.8, ll. 41-45): a memory (604) to store an image comprising a plurality of virtual machines (114 and 116) and only one multi-tasking operating system, wherein each of the virtual machines comprises a wireless network application to execute on the multi-tasking operating system; a plurality of virtual machines device drivers, wherein each of the virtual machines directly communicates with a respective one of the virtual machine drivers (virtual machine 114 communicates with device driver 130 and virtual machine 116 communicates with transaction profiler 134 which may be a device driver, Fig 1 and Col.2, ll. 54-559 and Col.3, ll. 27-28); a processor (104, 602) to execute the virtual machines; and a bus (614) to communicate with the processor and the network (Figs. 1 and 6, and col. 1, line 66-col.2, line 53 and col.8, lines 28-51).

Consider claims 21 and 48 and as applied to claims 17 and 44 respectively above, Rothman further discloses a bus interface driver to communicate with the virtual machine device drivers and the bus (device drivers 130 and transaction profiler 134) (Fig.1, col.2, lines 54-61 and col.3, lines 4-10 and 25-32).

Claim Rejections - 35 USC § 103

Art Unit: 2617

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3, 12, 30 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu et al. ("Shu", United States Patent Application Publication No.: 2007/0078624 A1) as applied to claims 1, 10, 17, 28, 37 and 44 respectively above, and

further in view of Miyauchi (United States Patent Application Publication No.: US 2002/0089875 A1).

Consider claims 3, 12, 30 and 39 and as applied to claims 1, 10, 17, 28, 37 and 44 respectively above, Shu does not explicitly disclose the claimed limitations.

In the same field of endeavor Miyauchi discloses a volatile memory (RAM 26); and a memory controller (25) to create a copy of the image from the non-volatile memory to the volatile memory; wherein the processor executes the virtual machines (firmware stored in nonvolatile memory) from the volatile memory (Fig. 3 and paragraph [0041]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to execute a program as disclosed by Miyauchi in the wireless software access point of Shu to reduce the size of the device.

8. Claims 4, 13, 31, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu et al. ("Shu", United States Patent Application Publication No.: 2007/0078624 A1) as applied to claims 1, 10, 17, 28, 37 and 44 respectively above, and further in view of Baumberger (United States Patent Application Publication No.: US 2005/0102671 A1).

Consider claims 4, 13, 31 and 40, and as applied to claims 1, 10, 17, 28, 37 and 44 respectively above, Shu does not explicitly disclose the claimed limitations.

In the same field of endeavor Baumberger discloses that the memory comprises a virtual machine queue for each virtual machine (queues 104a and 104b for virtual

Art Unit: 2617

machines 101a and 101b respectively) and a processor queue for the processor (the processor accesses virtual machine queues 104); wherein the processor stores data to be processed for the virtual machine being executed by the processor in the processor queue (paragraph [0020]); wherein each virtual machine creates a copy in the respective virtual machine queue of the data in the processor queue when the processor is executing the respective virtual machine (Fig. 2); and wherein when the processor resumes executing one of the virtual machines after executing another of the virtual machines, the one of the virtual machines copies the data from the respective virtual machine queue to the processor queue (paragraphs [0020] and [0021]).

Therefore it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use virtual machine queues as disclosed by Baumberger in the wireless device of Shu in order to run multiple virtual machines on one platform at the same time.

9. Claims 9 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shu et al. ("Shu", United States Patent Application Publication No.: 2007/0078624 A1) as applied to claims 1 and 28 respectively above, and further in view of Gurevich (United States Patent Application Publication No.: US 2005/0174962 A1).

Consider claims 9 and 36 and as applied to claims 1 and 28 respectively above, Shu discloses the virtual machines comprising a wireless network access point virtual machine and a wireless network client virtual machine; wherein the processor executes the wireless network access point virtual machine and the wireless network

Art Unit: 2617

client virtual machine concurrently (the Soft AP capable device can be configured to emulate at any given time both a client station and a LAN Access Point) (paragraph [0021]).

However Shu does not explicitly disclose that the wireless network client virtual machine comprises

- a first virtual wireless port to communicate with the port, and

- a first virtual bridge to communicate with the first virtual wireless port;

- and wherein the wireless network access point virtual machine comprises a second virtual wireless port to communicate with the port, a virtual distribution service port to communicate with the first virtual bridge, and a second virtual bridge to communicate with the second virtual wireless port and the virtual distribution service port.

In the same field of endeavor Gurevich discloses that the wireless network client virtual machine comprises a first virtual wireless port to communicate with the port (e.g. virtual network interface 36), and a first virtual bridge (IP layer routing 460 to communicate with the first virtual wireless port;

and wherein the wireless network access point virtual machine comprises a second virtual wireless port (e.g. virtual network interface 38) to communicate with the port, a virtual distribution service port to communicate with the first virtual bridge, and a second virtual bridge to communicate with the second virtual wireless port and the virtual distribution service port (wireless distribution service WDS 42) (Fig.3 and paragraphs [0034]-[0036]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to incorporate the teachings of Gurevich in the system of Shu in order to communicate simultaneously with different networks.

10. Claims 19 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al. ("Rothman", United States Patent No.: US 7,290,178 B2) as applied to claims 17 and 44 respectively above, and further in view of Miyauchi (United States Patent Application Publication No.: US 2002/0089875 A1).

Consider claims 19 and 46 and as applied to claims 17, and 44 respectively above, Rothman does not explicitly disclose the claimed limitations.

In the same field of endeavor Miyauchi discloses a volatile memory (RAM 26); and a memory controller (25) to create a copy of the image from the non-volatile memory to the volatile memory; wherein the processor executes the virtual machines (firmware stored in nonvolatile memory) from the volatile memory (Fig. 3 and paragraph [0041]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to execute a program as disclosed by Miyauchi in the system of Rothman to reduce the size of the device.

11. Claims 20 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al. ("Rothman", United States Patent No.: US 7,290,178 B2) as applied to claims 17 and 44 respectively above, and further in view of Baumberger (United

States Patent Application Publication No.: US 2005/0102671 A1).

Consider claims 20 and 47, and as applied to claims 17 and 44 respectively above, Rothman does not explicitly disclose the claimed limitations.

In the same field of endeavor Baumberger discloses that the memory comprises a virtual machine queue for each virtual machine (queues 104a and 104b for virtual machines 101a and 101b respectively) and a processor queue for the processor (the processor accesses virtual machine queues 104); wherein the processor stores data to be processed for the virtual machine being executed by the processor in the processor queue (paragraph [0020]); wherein each virtual machine creates a copy in the respective virtual machine queue of the data in the processor queue when the processor is executing the respective virtual machine (Fig. 2); and wherein when the processor resumes executing one of the virtual machines after executing another of the virtual machines, the one of the virtual machines copies the data from the respective virtual machine queue to the processor queue (paragraphs [0020] and [0021]).

Therefore it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use virtual machine queues as disclosed by Baumberger in the system of Rothman in order to run multiple virtual machines on one platform at the same time.

12. Claims 18, 22, 23, 24, 25, 26, 45, 49, 50, 51, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al. ("Rothman", United States

Art Unit: 2617

Patent No.: US 7,290,178 B2) as applied to claims 17, 22, 44 and 49 respectively above, and further in view of Shu et al. ("Shu", United States Patent Application Publication No.: 2007/0078624 A1).

Consider claims 18 and 45, an as applied to claims 17 and 44 respectively above, Rothman does not specifically disclose the claimed limitation.

In the same field of endeavor Shu discloses a wireless network device which is compliant with a standard selected from the group consisting of IEEE standards 802.11, 802.11 a, 802.11 b, 802.11g and 802.11 n (paragraphs [0005]-[0006]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a standard as disclosed by Shu in the system of Rothman in order to decrease the complexity of wireless LAN configuration and maintenance.

Consider claims 22 and 49, and as applied to claims 17 and 44 respectively above, Rothman does not explicitly disclose the claimed limitations.

In the same field of endeavor Shu discloses a physical-layer device to communicate with the network; and a media access controller to communicate with the physical-layer device and the bus (paragraph [0022]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have a physical-layer device and a media access controller as disclosed by Shu in the system of Rothman in order to decrease the complexity of wireless LAN configuration and maintenance.

Consider claims 23 and 50 and as applied to claims 22 and 49, Rothman

Art Unit: 2617

discloses a first bus interface driver to communicate with the virtual machine device drivers and the bus; a second bus interface driver to communicate with the bus (device drivers 130) (Fig.1, col.2, lines 54-61 and col.3, lines 4-10); and Shu discloses a media access controller device driver to communicate with the second bus interface driver and the media access controller (paragraph [0022]).

Consider claims 24 and 51, and as applied to claims 17 and 44 respectively above, Rothman does not disclose the claimed limitation.

In the same field of endeavor Shu discloses that at least one of the wireless network applications is selected from the group consisting of a wireless network access point; a wireless network client; a wireless network point-to-point bridge; a wireless network multi-point bridge; and a wireless network repeater (paragraphs [0026], [0028], [0031], and [0035]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Shu in the system of Rothman in order to decrease the complexity of wireless LAN configuration and maintenance.

Consider claims 25 and 52, and as applied to claims 17 and 44 respectively above, Rothman does not disclose the claimed limitation.

In the same field of endeavor Shu discloses an input device to select one or more of the virtual machines; wherein the processor executes the virtual machines selected by the input device (the input device is inherently taught by the wireless network device, which can be a laptop, a PDA or a cell phone) (paragraph [0021]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Shu in the system of Rothman in order to decrease the complexity of wireless LAN configuration and maintenance.

Consider claims 26 and 53, and as applied to claims 17 and 44 respectively above, Rothman does not disclose the claimed limitation.

In the same field of endeavor Shu discloses that the processor executes a plurality of the virtual machines concurrently (e.g. the Soft AP capable device can be configured to emulate at any given time both a client station and a LAN Access Point) (paragraph [0021]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Shu in the system of Rothman in order to decrease the complexity of wireless LAN configuration and maintenance.

13. Claims 27 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al. ("Rothman", United States Patent No.: US 7,290,178 B2) as applied to claims 17 and 44 respectively above, and further in view of Gurevich (United States Patent Application Publication No.: US 2005/0174962 A1).

Consider claims 27 and 54 and as applied to claims 17 and 44 respectively above, Rothman does not explicitly disclose that the wireless network client virtual machine comprises a first virtual wireless port to communicate with the port, and a first

virtual bridge to communicate with the first virtual wireless port;
and wherein the wireless network access point virtual machine comprises a second virtual wireless port to communicate with the port, a virtual distribution service port to communicate with the first virtual bridge, and a second virtual bridge to communicate with the second virtual wireless port and the virtual distribution service port.

In the same field of endeavor Gurevich discloses that the virtual machines comprising a wireless network access point virtual machine and a wireless network client virtual machine; wherein the processor executes the wireless network access point virtual machine and the wireless network client virtual machine concurrently (paragraphs [0035]-[0036]); wherein the wireless network client virtual machine comprises a first virtual wireless port to communicate with the port (e.g. virtual network interface 36), and a first virtual bridge (IP layer routing 460 to communicate with the first virtual wireless port; and wherein the wireless network access point virtual machine comprises a second virtual wireless port (e.g. virtual network interface 38) to communicate with the port, a virtual distribution service port to communicate with the first virtual bridge, and a second virtual bridge to communicate with the second virtual wireless port and the virtual distribution service port (wireless distribution service WDS 42) (Fig.3 and paragraphs [0034]-[0036]).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to incorporate the teachings of Gurevich in the system of Rothman in order to communicate simultaneously with different networks.

Response to Arguments

14. Applicant's arguments filed 04/06/2009 have been fully considered but they are not persuasive. Regarding claims 1, 2, 5, 6, 7, 8, 10, 11, 14, 15, 16, 28, 29, 32, 33, 34, 35, 37, 38, 41, 42 and 43, the Applicants basically argue that Shu does not teach a plurality of virtual machines because even if the Soft AP of Shu were a virtual machine, Shu only discloses on Soft AP. The Examiner respectfully disagrees with Applicants' interpretation of Shu because Shu clearly explains that the Soft AP contains the functionality of both a client station (i.e. virtual machine 1) and a wireless LAN access point (i.e. virtual machine 2). And that the Soft AP can emulate one or the other, or both, at any given time (see paragraph 21). The applicants further argue that Shu does not teach virtual machines because as best understood by Applicants, none of the examples of the Soft AP of Shu correspond to virtual machines as disclosed by the Applicants in paragraph 23 of the specification. According to the Applicants, virtual machines allow one physical resource to function as multiple resources. Again, the Examiner respectfully disagrees with Applicants interpretation of Shu because in paragraph 22 Shu further explains that Soft AP integrated into a wireless device (i.e. the physical resource) is designed to function in a Windows environment and it is built with both station and access port capabilities in its Media Access Control (MAC) layers, that allow the Soft AP to function as an access point and as a station at any given time. Therefore the Soft AP of Shu does not need to boot-up to go from access point to station.

Regarding claim 17 and the Rothman reference, the Applicants basically argue that only one of the two virtual machines, specifically virtual machine 114, of Rothman communicates with a device driver. The Examiner respectfully disagrees because Rothman clearly explains that virtual machine 116 includes a transaction profiler 134 which may be a device driver (see Col. 2, ll. 56-57 and Col. 3, ll. 27-28).

Therefore, in view of the above reasons and having addressed Applicants' arguments, the previous rejection is maintained and made FINAL by the Examiner.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERMAN VIANA DI PRISCO whose telephone number is (571)270-1781. The examiner can normally be reached on Monday through Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information

Application/Control Number: 10/829,131

Page 18

Art Unit: 2617

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 2617

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Supervisory Patent Examiner, Art Unit 2617

May 4, 2009